Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in this application:

Listing of Claims:

1.-22. (canceled).

23. (withdrawn)   In a rate adaptive cardiac pacemaker adapted to be implanted in a patient's body, an improvement comprising:

electrodes situated on one of a housing and a header of the pacemaker, and

an electronic module for measuring impedance changes at said electrodes when the pacemaker is implanted, to control the pacing rate generated by the pacemaker.

24. (withdrawn)   The device of claim 23, including

an accelerometer for detecting status of physical activity of the patient to assist in adjusting the pacing rate of the pacemaker.

25. (new)   An implantable device-implemented method of early detection and monitoring of congestive heart failure in a patient, which comprises the steps of: measuring local impedance of a portion of the patient's body generally occupied by the lungs solely through surface mounted electrodes on the device with the device implanted subcutaneously in the patient's body at the locality where the impedance measurements are to be performed, determining when the local impedance measurements are indicative of a condition of congestive heart failure other than from the existence of a state of edema of the patient, and detecting respiratory rate and depth of respiration of the patient through circuitry of said device electrically coupled to said electrodes as a measure of patient ventilation.

26. (new)   The device-implemented method of claim 25, including:

controlling the pacing rate of a rate adaptive artificial cardiac pacemaker implanted in the patient, according to the measured patient ventilation.

ATTORNEYDOCKET.ACR/050   2

1   **27.** (new) The device-implemented method of claim **26**, including:

2   employing an accelerometer in said device to detect physical activity of the patient and

3 to generate an activity signal as a secondary control of the pacing rate of said pacemaker.

1   **28.** (new) The device-implemented method of claim **25**, including:

2   detecting the cardiopulmonary status of the patient, using the measured patient

3 ventilation.

1   **29.** (new) The device-implemented method of claim **25**, wherein the device is

2 implanted subcutaneously at the lower left side of the patient's thoracic cage.

1   **30.** (new) The device-implemented method of claim **25**, including determining when

2 the impedance measurements exceed a predetermined threshold value indicative of a need for

3 immediate attention to a condition of congestive heart failure.

1   **31.** (new) An implantable device-implemented method of early detection and

2 monitoring of congestive heart failure in a patient, which comprises the steps of: measuring

3 local impedance of a portion of the patient's body generally occupied by the lungs solely

4 through surface mounted electrodes on the device with the device implanted subcutaneously

5 in the patient's body at the locality where the impedance measurements are to be performed,

6 determining when the local impedance measurements are indicative of a condition of

7 congestive heart failure based on factors other than the existence of edema, detecting the

8 patient's heart rate/activity pattern through said electrodes while concurrently monitoring said

9 local impedance measurements to evaluate cardiopulmonary status of the patient, and

10 evaluating the trend of the heart rate/activity pattern and said concurrent local impedance

11 measurements against one another over a selected period of time, as an additional indicia of

ATTORNEYDOCKET.ACR.050

3

12   congestive heart failure.

1   **32.** (new) A body-implantable device to provide early detection of congestive heart

2   failure in a patient, comprising a circuit module having surface mounted electrodes of the

3   device arranged, when the device is implanted subcutaneously, for exposing said electrodes to

4   tissue in a portion of the patient's body generally occupied by the lungs, said circuit module

5   including circuitry that measures local impedance of said body portion through said surface

6   mounted electrodes and determines when the impedance measurements are indicative of a

7   condition of congestive heart failure wherein the determination of congestive heart failure is

8   based on factors other than the existence of edema of the patient, said circuit module further

9   including an accelerometer arranged and adapted to detect physical activity of the patient and

10   to respond in real time to generate a concomitant signal to adjust pacing rate of an artificial

11   pacemaker implanted in the patient consonant with extent of the detected physical activity.

ATTORNEYDOCKET.ACR/050

4